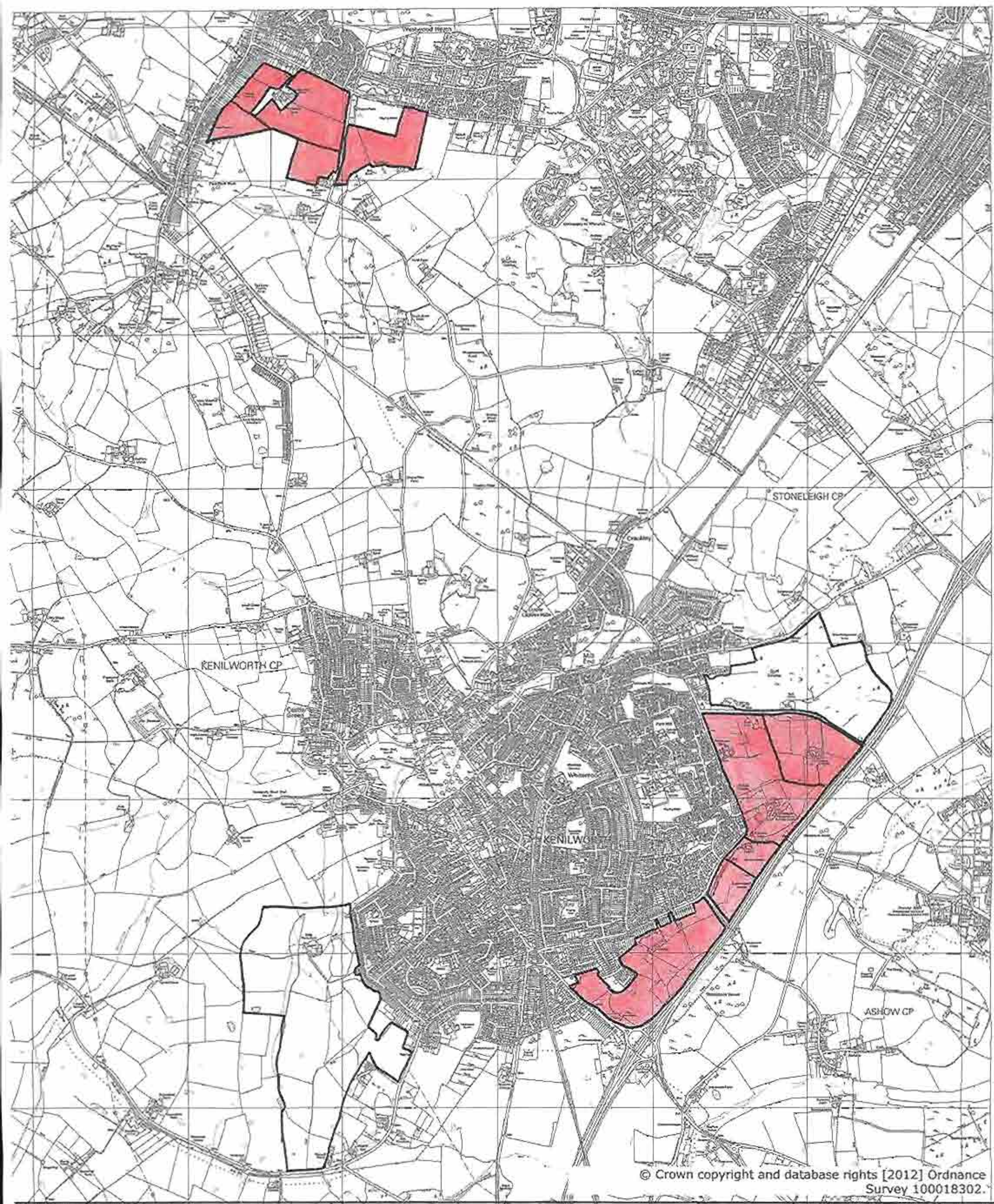


Development Site Locations & Access Points

Job No	Report No	Issue no	Report Name	Page
MID3347	001		Warwick District Council Strategic Transport Assessment Modelling	A1

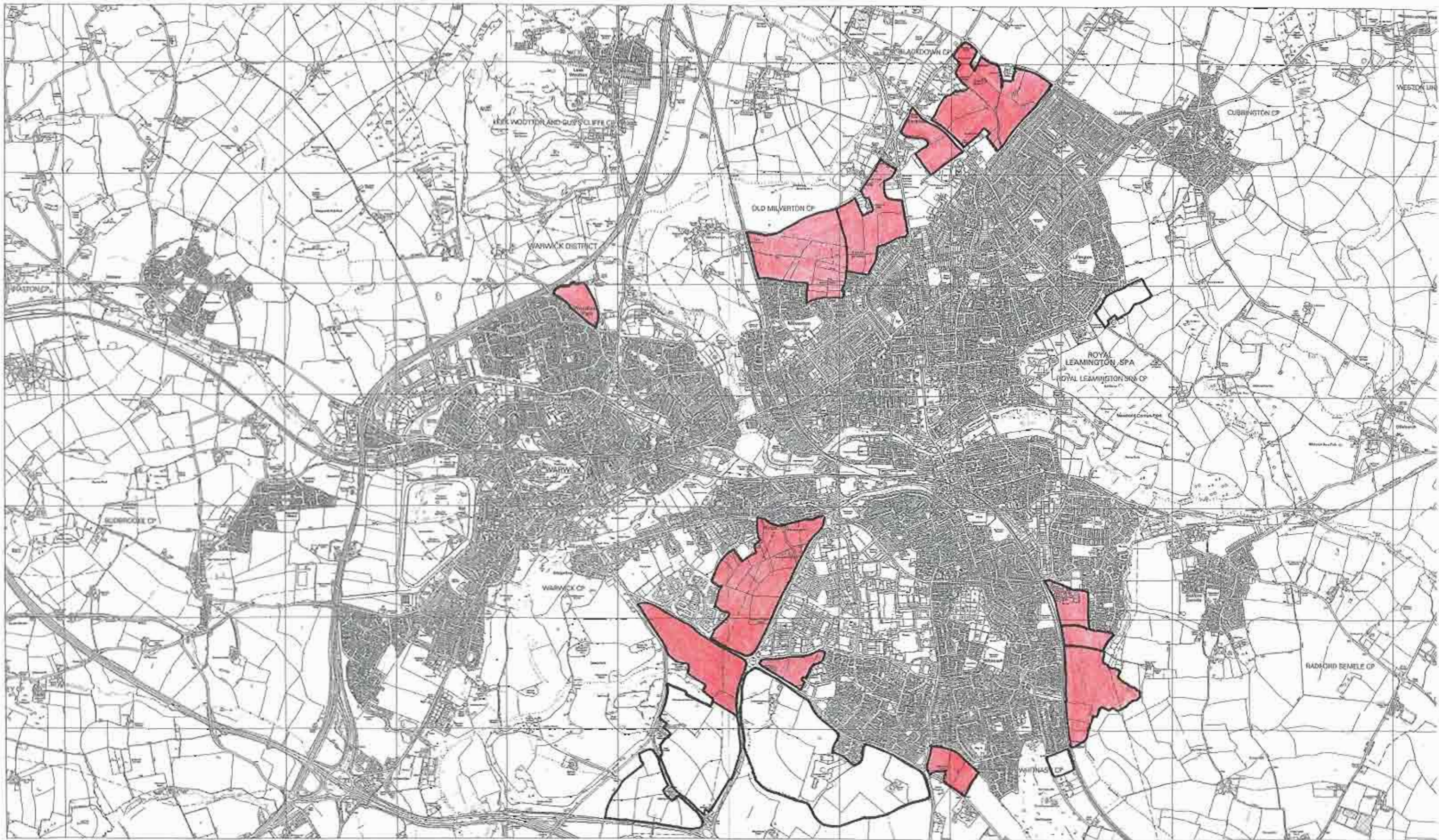


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OPTION 1



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OPTION 1

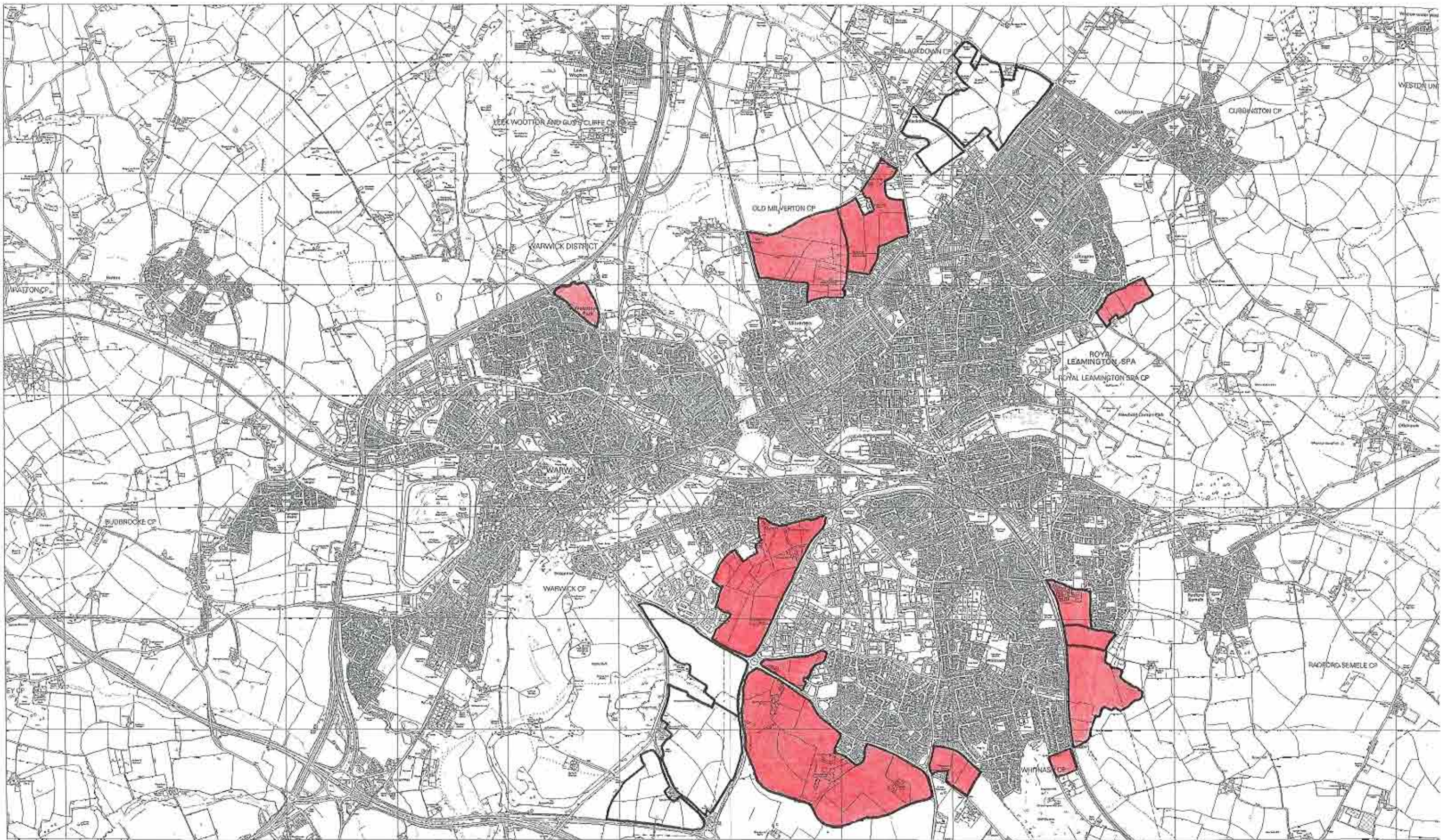


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ldf@warwickdc.gov.uk (01926

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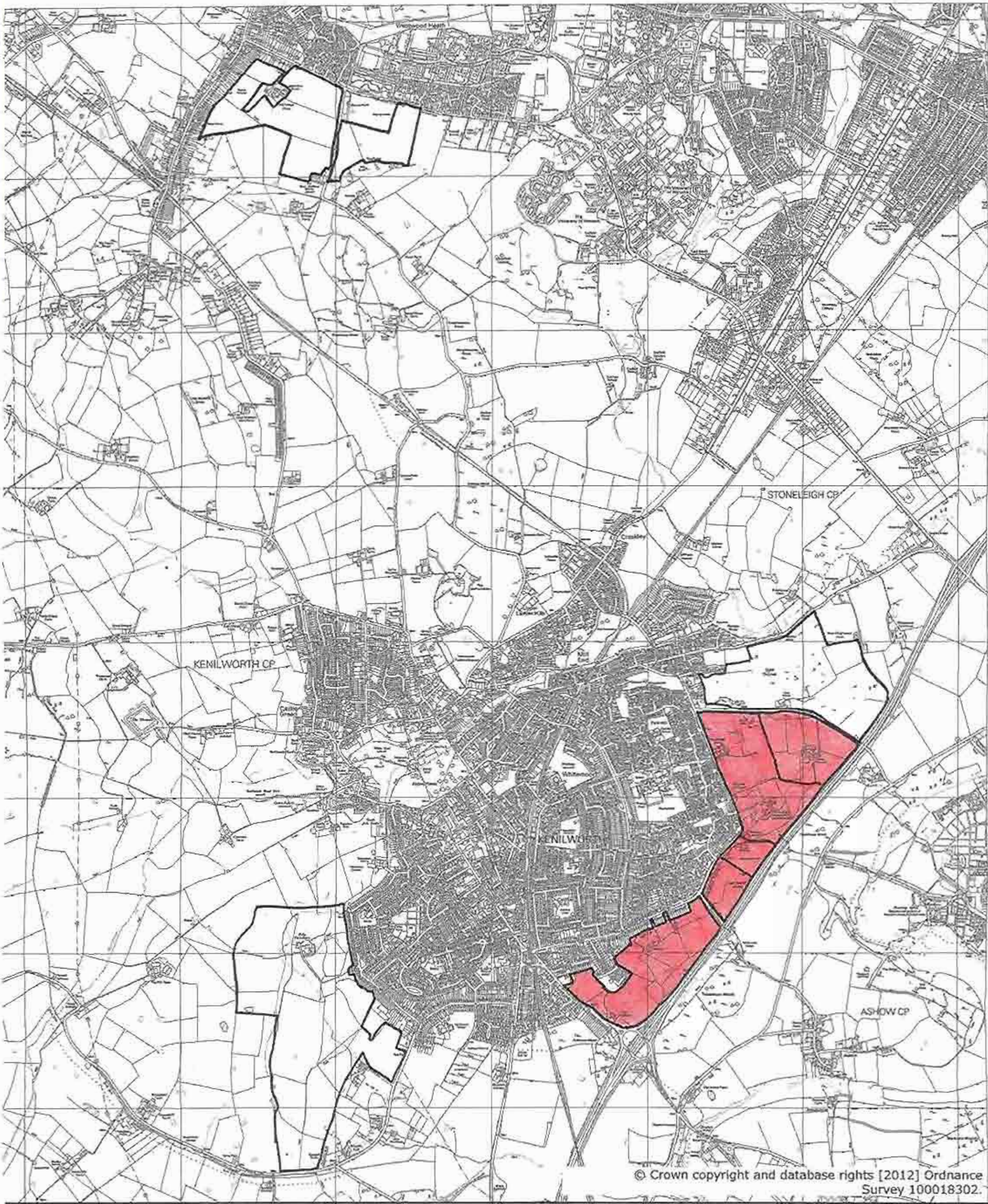


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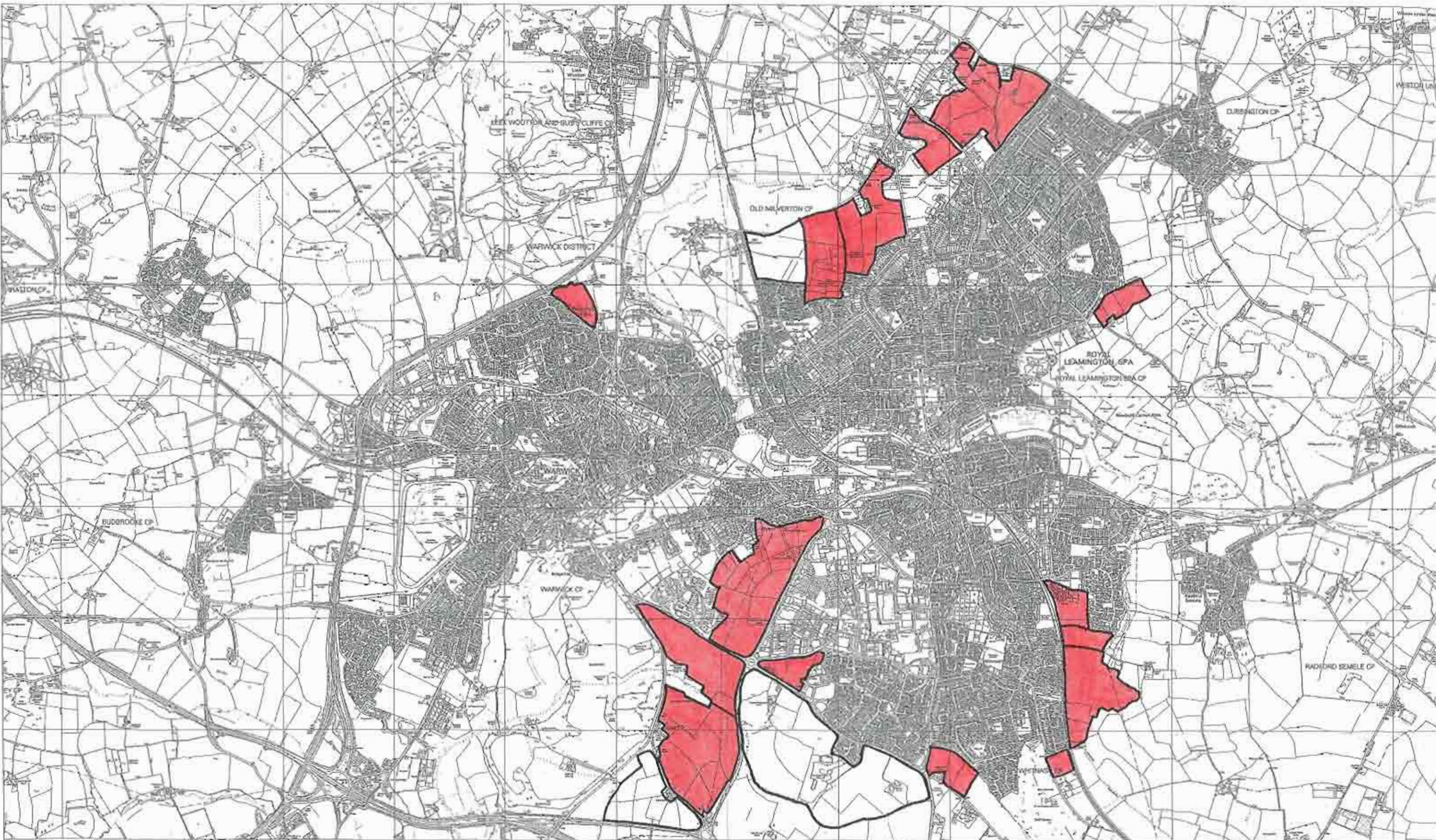


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OPTION 2



Key

OPTION 3

Note, this option also includes development at the villages of Lapworth(Kingswood), Bishop's Tachbrook, Radford Semele and Hampton Magna.

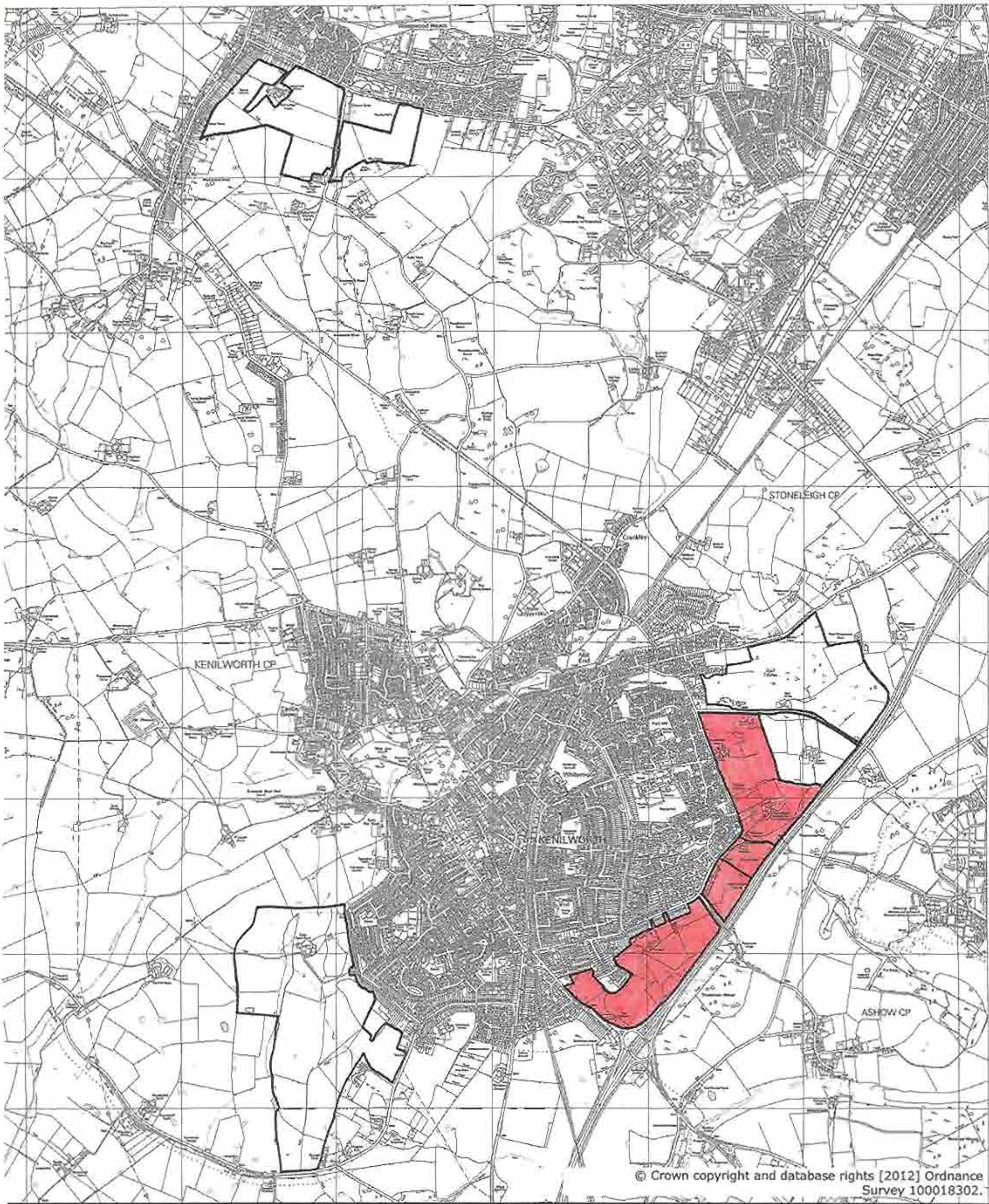


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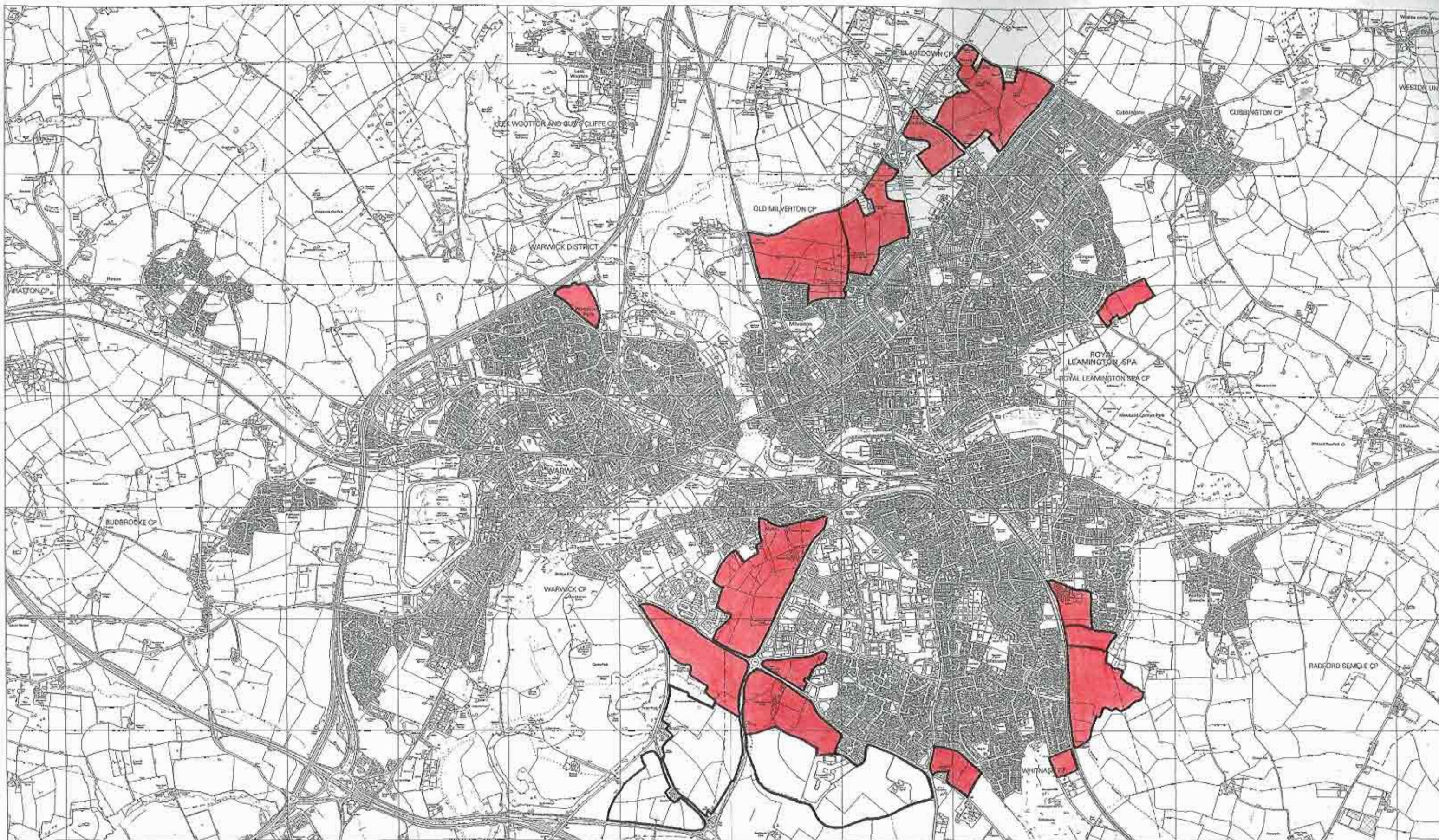


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OPTION 3



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OPTION 4

Note, this option also includes development at the villages of Lapworth(Kingswood), Bishop's Tachbrook, Radford Semele and Hampton Magna.

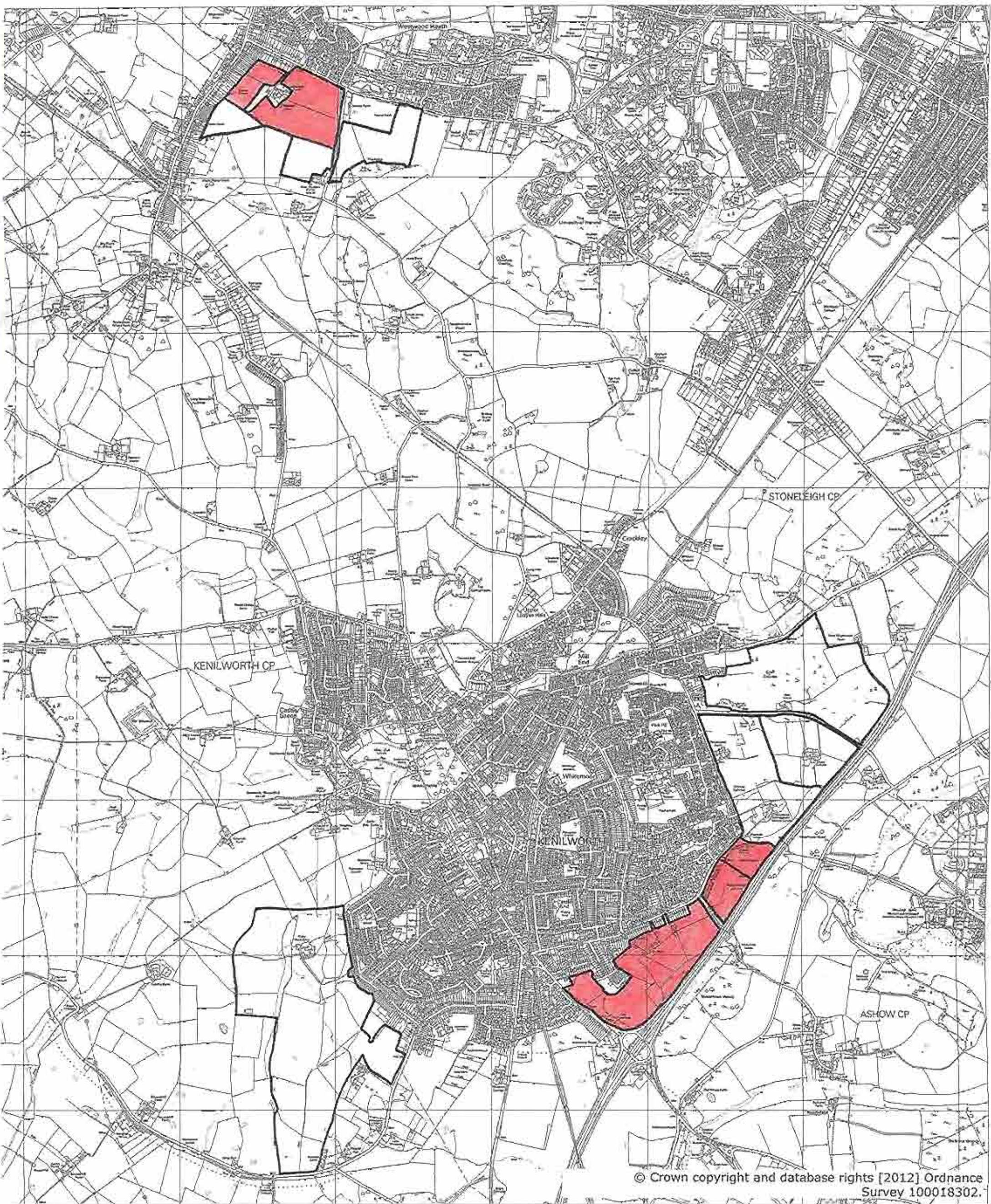


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OPTION 4

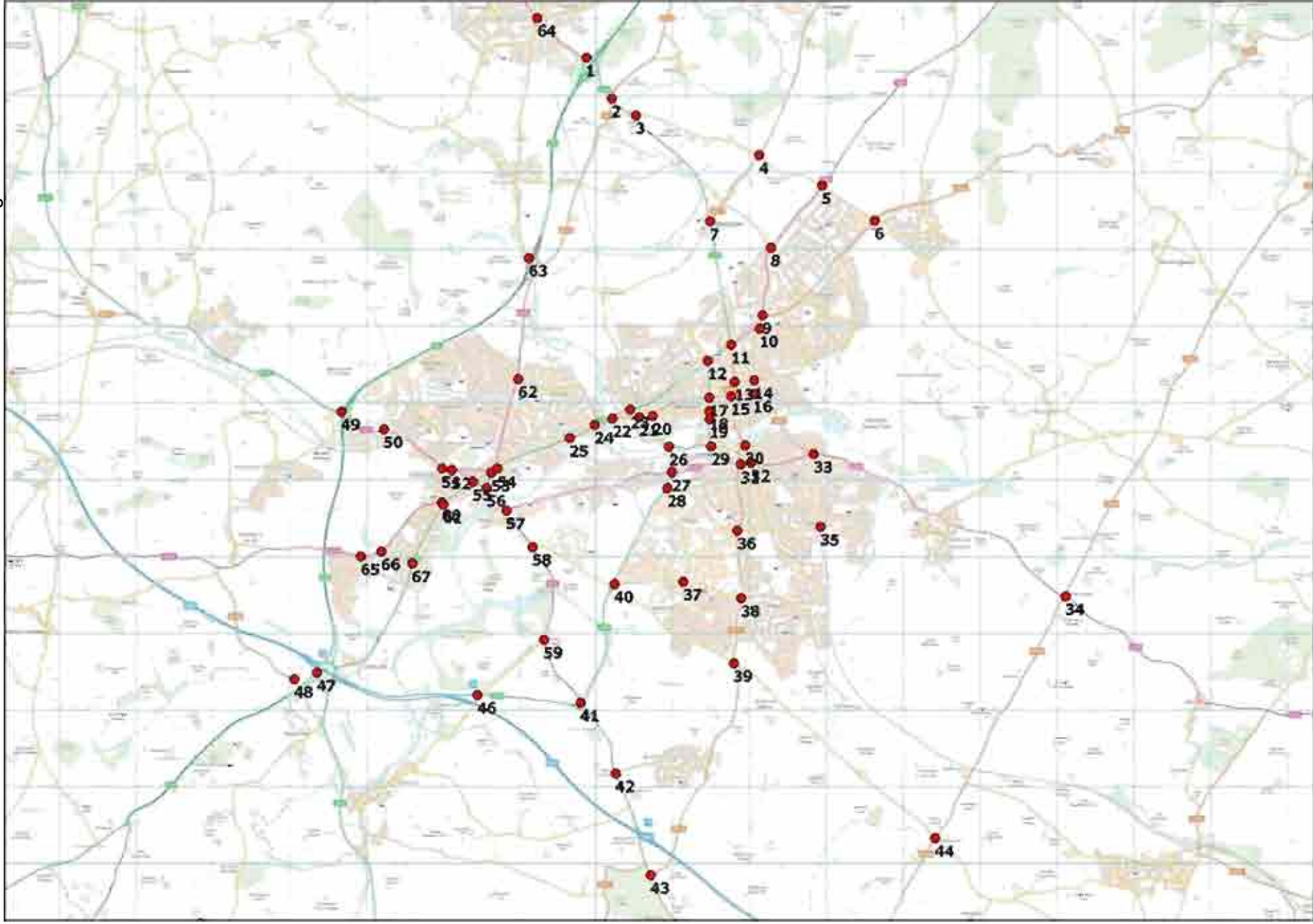
Site	Details
Blackdown	Location: This site is located to the south of Westhill Rd, east of Stoneleigh Rd & west of Leicester Lane. The majority of site lies north of Sandy Lane but there is also a part assumed to lie on the land south of Sandy Lane. [W&L Zone 541] Access: An access point is provided from Sandy Lane for northern and southern sections of the site via mini-roundabout consisting of 2 lanes on the circulatory and short second lane flares on each of the 4 approaches. A second access point is provided from A445 Leicester Lane where the existing junction with Telford Ave has been converted to a 4 arm mini roundabout in the same style as the Sandy Lane access junction.
Fieldgate Lane	Location: This site is located to the south of Whitnash by the Leamington Gold Club and to the immediate west of the railway track. [W&L Zone 555] Access: Access has been provided via Golf Lane.
Glasshouse Lane	Location: This site is located to the east of Glasshouse Lane in Kenilworth. [K&S Zone 254] Access: Access is provided via 2 mini roundabouts off Glasshouse Lane. The roundabout configuration provides 2 lane circulatory with short second lane flares on each of the 3 approaches (NB/SB mainline and site access).
Crewe Gardens	Location: This site is located to the immediate east of Glasshouse Lane development and to the south and south west of Crew Lane in Kenilworth. [K&S Zone 255] Access: Access is provided via a priority controlled 'T' junction from Crew Lane.
Loes Farm	Location: This site is located with Coventry Rd to the east, Primrose Hill to the south and the A46 to the west. [W&L Zone 546] Access: Site access is provided via 2 new links (extensions to the existing side roads) between Primrose Hill and the site
N Milverton East	Location: This site is located to the north of Leamington with Kenilworth Rd to the immediate east and Old Milverton Lane to the north and north west. [W&L Zone 542] Access: Access has been provided with a new signalised junction joining Kenilworth Rd to the east of the site and a priority junction at the north that connects to Old Milverton Lane. Additionally, a new through road has been included that passes through the centre of the site and connects to the existing network at Guy's Cliffe Ave.
N Milverton West	Location: This site is located to the north of Leamington and to the west of the N Milverton East land. Sandy Lane is to the north of the site and Old Milverton Rd to the west. To the south lies the existing residential streets north of A445 Rugby Rd. [W&L Zone 544 (full site) / Zone 544 (partial site)] Access: Access has been provided via an extension to the existing network at Guy's Cliffe Ave. Additionally, as noted for N Milverton East a new through road has been included that eventually joins Kenilworth Rd via a new signalised junction.
Red House Farm	Location: This site is located to the east of Lillington, north east of Leamington. [W&L Zone 545] Access: Access is provided via Mason Ave.

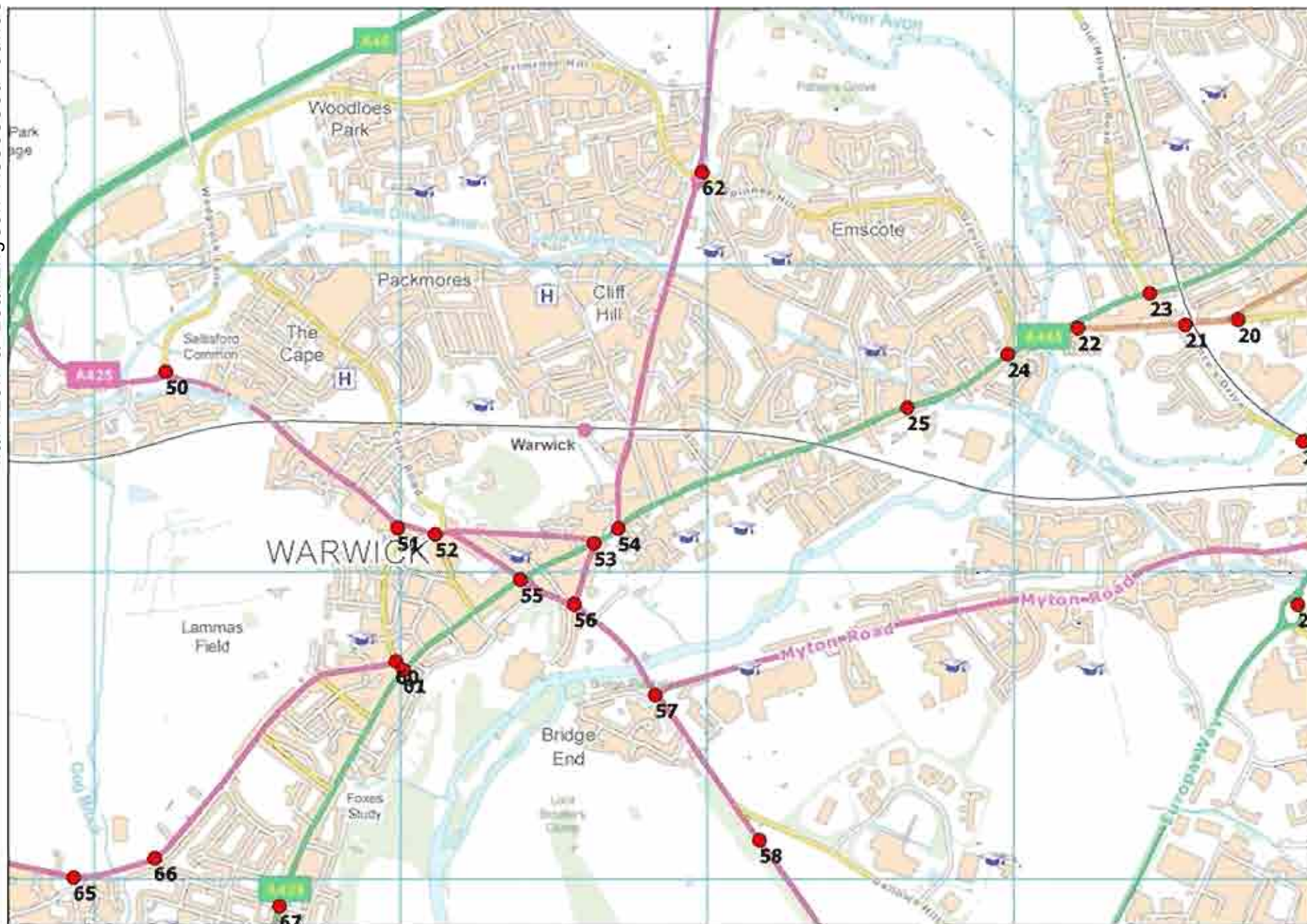
South of Gallows Hill	Location: This site is located to the immediate south of Gallows Hill. [W&L Site 548] Access: Access is provided via a new 4 arm mini roundabout on Gallows Hill at the junction with the western access to the Tech Park. The roundabout has been included with 2 lane circulatory and 2nd lane flares on each approach.
The Asps	Location: This site is located south of the Gallows Hill development land with Banbury Rd to the west and Europa Way to the east. [W&L Zone 549] Access: Access has been provided via the same access point as the South of Gallows Hill development (i.e. Roundabout on Gallows Hill) and via a new mini roundabout that connects to the west of the site to Banbury Rd.
South of Harbury Lane	Location: This site is located on the land south of Harbury Lane with Europa Way to the west. [W&L Zone 551 (full site) / Zone 552 (partial site)] Access: The full site has been provided with 2 access points from Harbury Lane: one access to the north west via a new 5th arm at the existing roundabout junction at Harbury Lane / Gallagher Way / Earl Rivers Ave and a second access via a new 2 lane circ mini roundabout at the existing Harbury Lane / Cicero Approach junction. The partial site has only been given the one access at the Gallagher Way / Earl Rivers junction.
Thickthorn	Location: This site is located to the immediate west of the A46 with A452 to the south and Birches Lane / Glasshouse Lane running to the north west. [K&S Zone 253 & W&L Zone 557] Access: Access is provided via a new signalised junction joining A452 to the south of the site and a priority junction onto Glasshouse Lane to the north-west.
Warwick Gates Employment Land	Location: This site is located on the land between Heathcote Lane (to the north) and Harbury Lane (to the south) by Europa Way / Gallows Hill roundabout. [W&L Zone 105] Access: Access is provided by the existing access to this site via Macbeth Approach and Gallagher Way to the east of the site.
West of Europa Way	Location: This site is located to the west of Europa Way, north of Gallows Hill and south of Myton Rd. [W&L Zone 547] Access: Access is provided via 3 new junctions. Two new mini roundabouts off Europa way, consisting of 2 lane circulatory with short second lane flares on each approach. The northern access via Europa way has been located at the existing junction with Olympus Ave. The third access is via a priority controlled junction at Gallows Hill.
Westwood Heath	Location: This site is located to the south of Westwood Heath Rd and to the east of Cromwell Lane. This site is not within the modelled areas so is not directly included as a zone in either model (however the impact of the trips are captured).
Whitnash East	Location: This site is located on the eastern edge of Whitnash, south of Sydenham. The railway line runs along the western edge of the site. [W&L Zone 554] Access: Access to the site is via extensions to the existing roads at St. Fremund Way and via the southern arm at Prospect Rd / Sydenham Dr / Chesterton Dr roundabout.

Woodside Farm	Location: This site is located to the east of Tachbrook Rd immediately north of Harbury Lane and the junction with Oakley Wood Rd. [W&L Zone 553] Access: Site access has been provided via a new signal controlled junction off Tachbrook Rd to the west of the site.
Warwickshire College	Location: This site is located on the land where Warwickshire College currently resides. [W&L Zone 556]. N.B.: the college has been relocated to a site east of Brunswick St. Access: The existing access has been maintained within the model.
Land at Montague Rd	Location: This site is located to the east of Coventry Road and the west of Montague Rd, south of the Spinney Hill junction. [W&L Zone 362] Access: Access has been provided via an existing junction off Montague Rd.
Leam Cricket Club	This site is located north of Lillington Ave with Kenilworth Rd to the west. [W&L Zone 48] Access: The existing access points onto Lillington Ave and Kenilworth Rd have remained in line with the existing arrangements.
Station Approach	Location: This site is located south of Ave Rd, north of the railway line and to the east of the Adelaide Rd junction. [W&L Zone 63] Access: Access is provided via the southern arm at the existing Ave Rd / Adelaide Rd junction.
Leam Fire Station	Location: This site is located to the west of Dale street with Warwick St to the north and Regent St to the south. [W&L Zone 41] Access: The existing access has been maintained.
Sustainable Villages	This growth has been associated to the specific villages that are already depicted within the W&L model as separate zones [W&L Zone 207, 533 & 209]

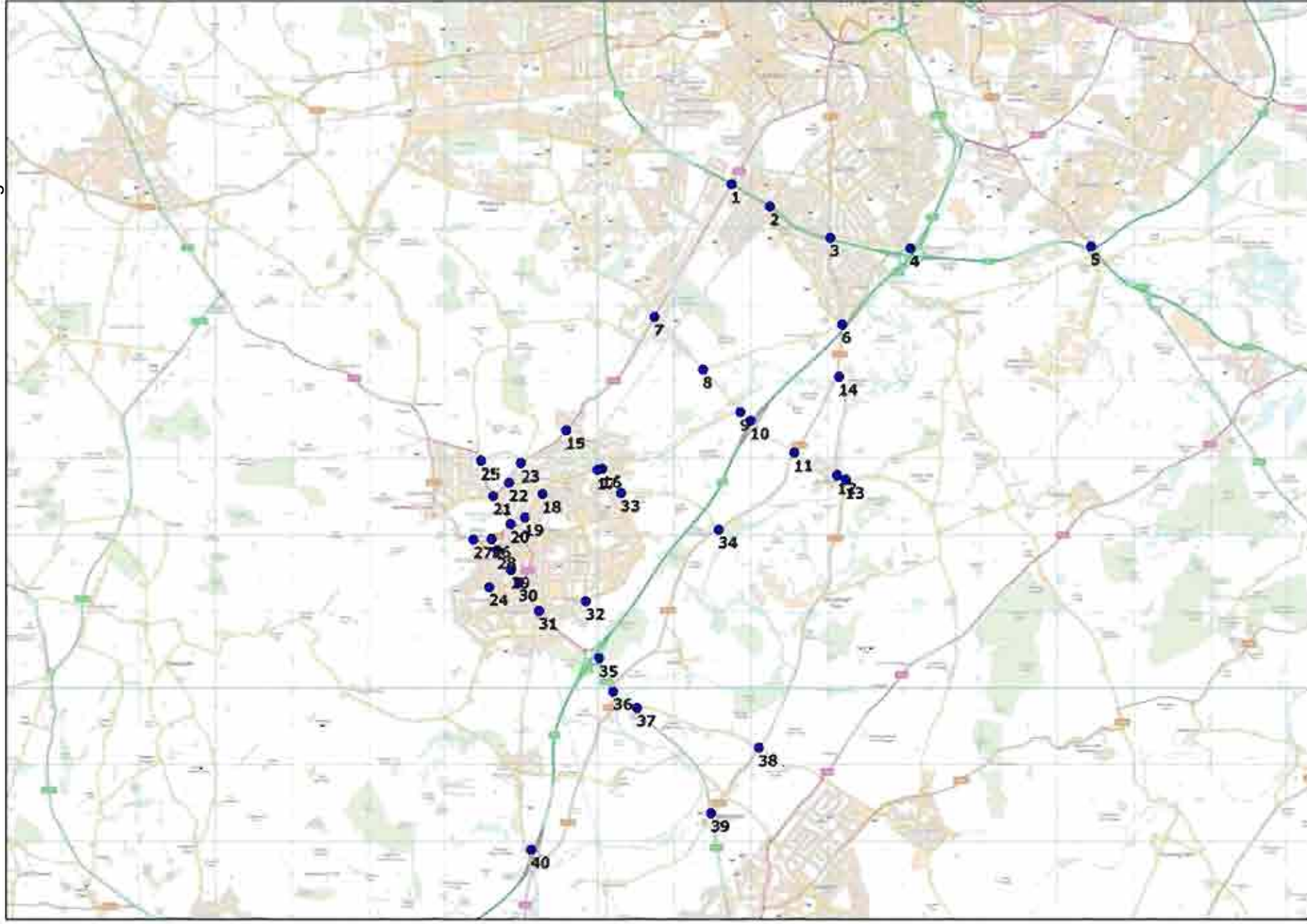
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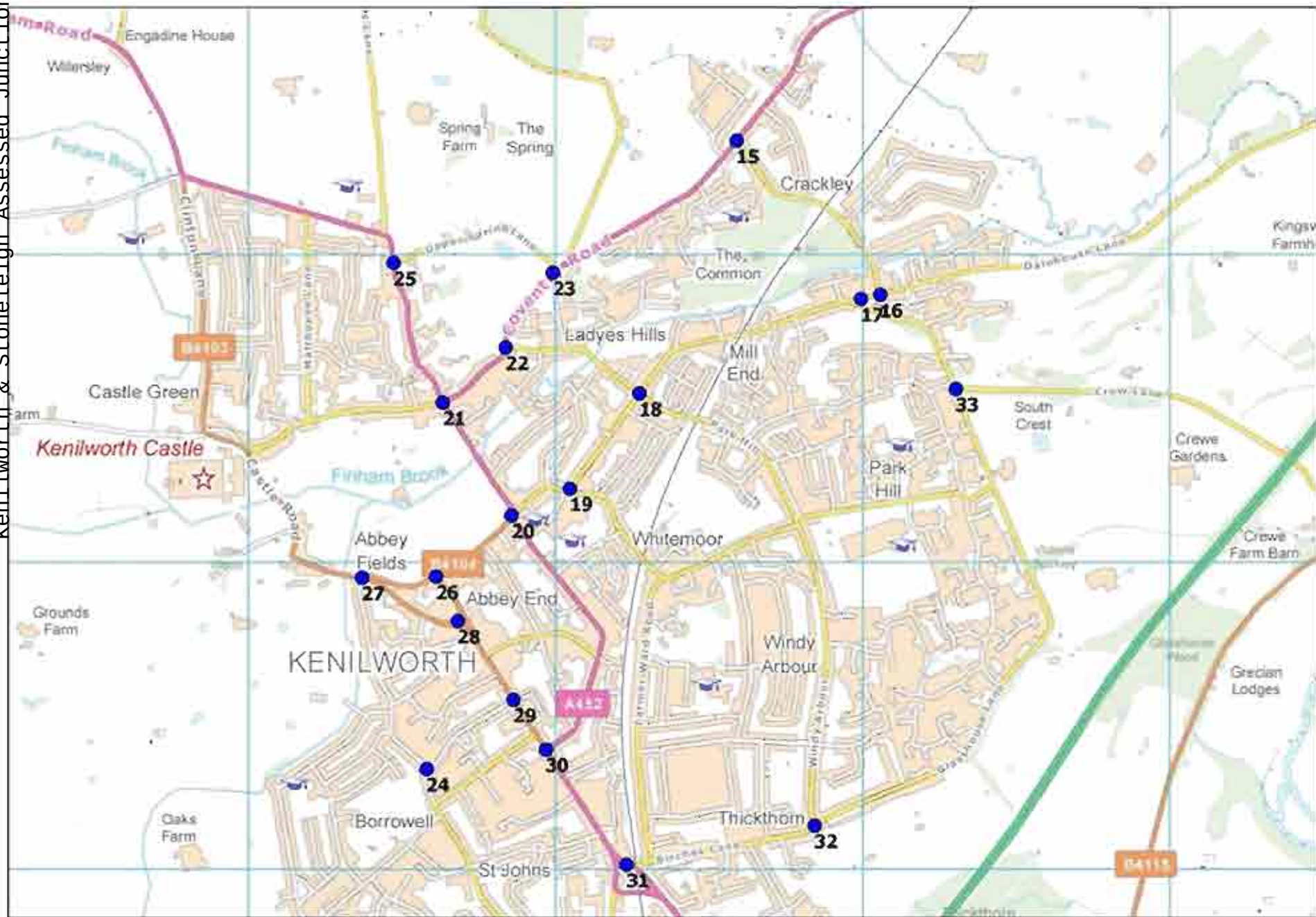
Job No	Report No	Issue no	Report Name	Page
MID3347	001		Warwick District Council Strategic Transport Assessment Modelling	B1







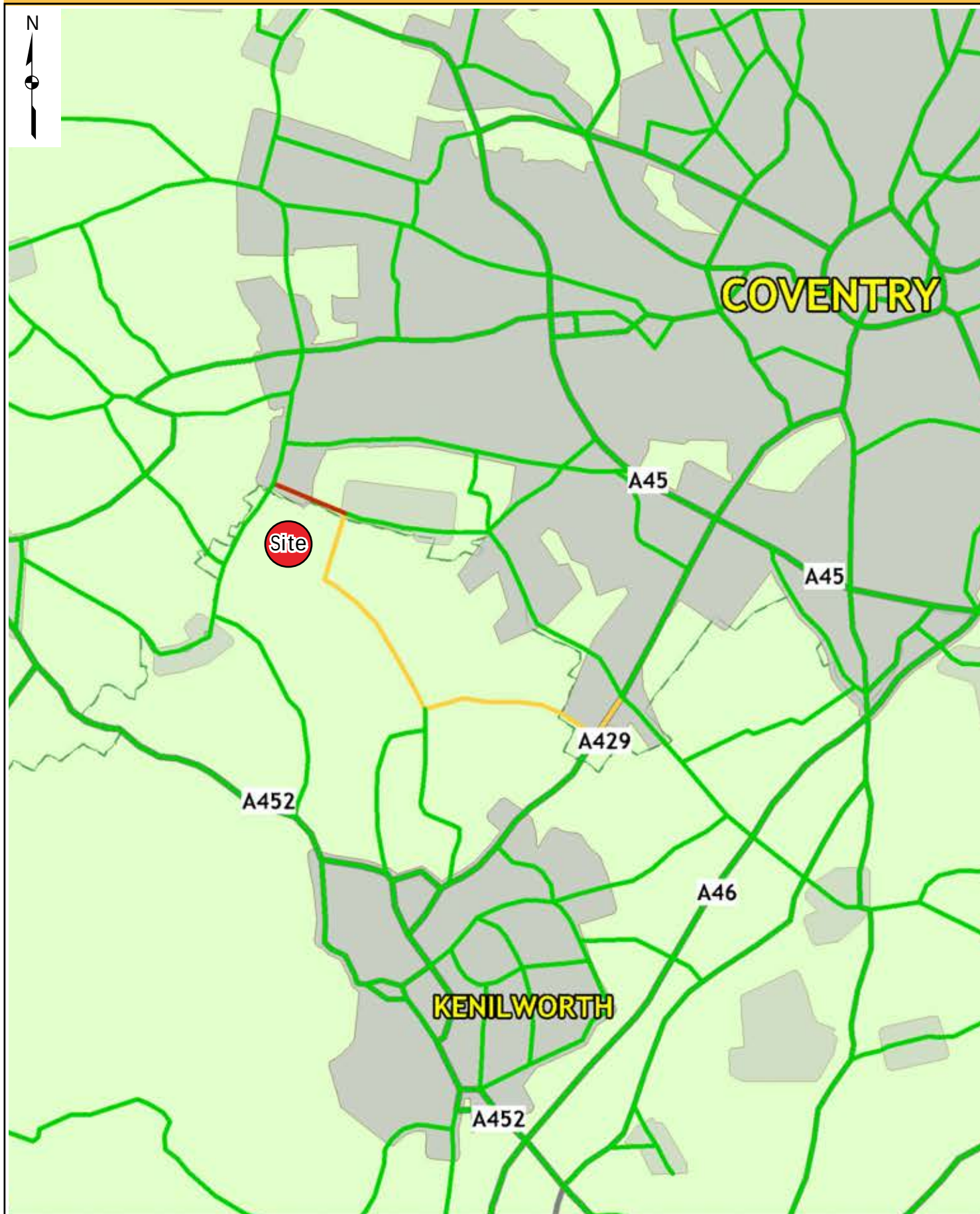




Appendix C

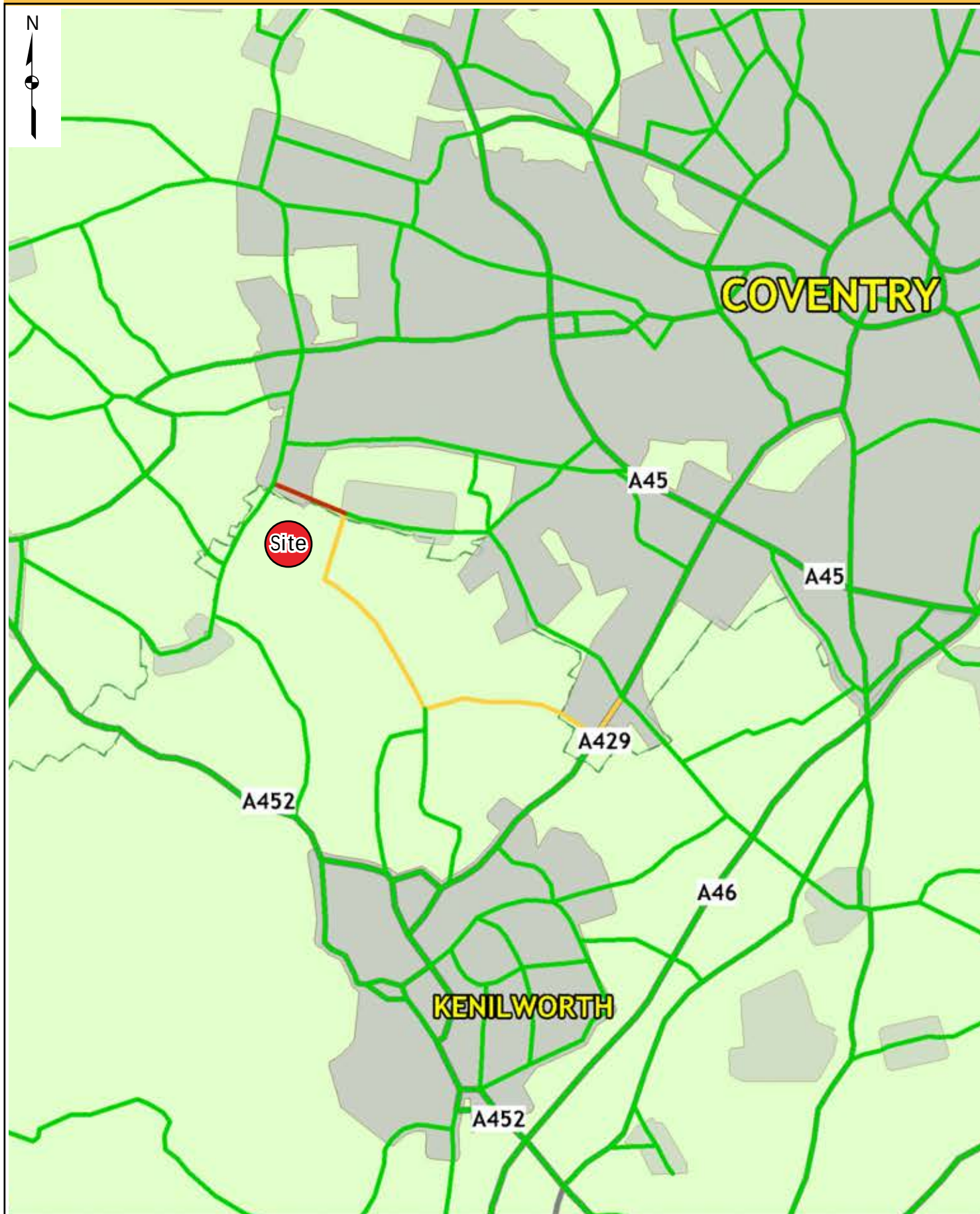
Westwood Heath Impact Plots

Job No	Report No	Issue no	Report Name	Page
MID3347	001		Warwick District Council Strategic Transport Assessment Modelling	C1



GEH

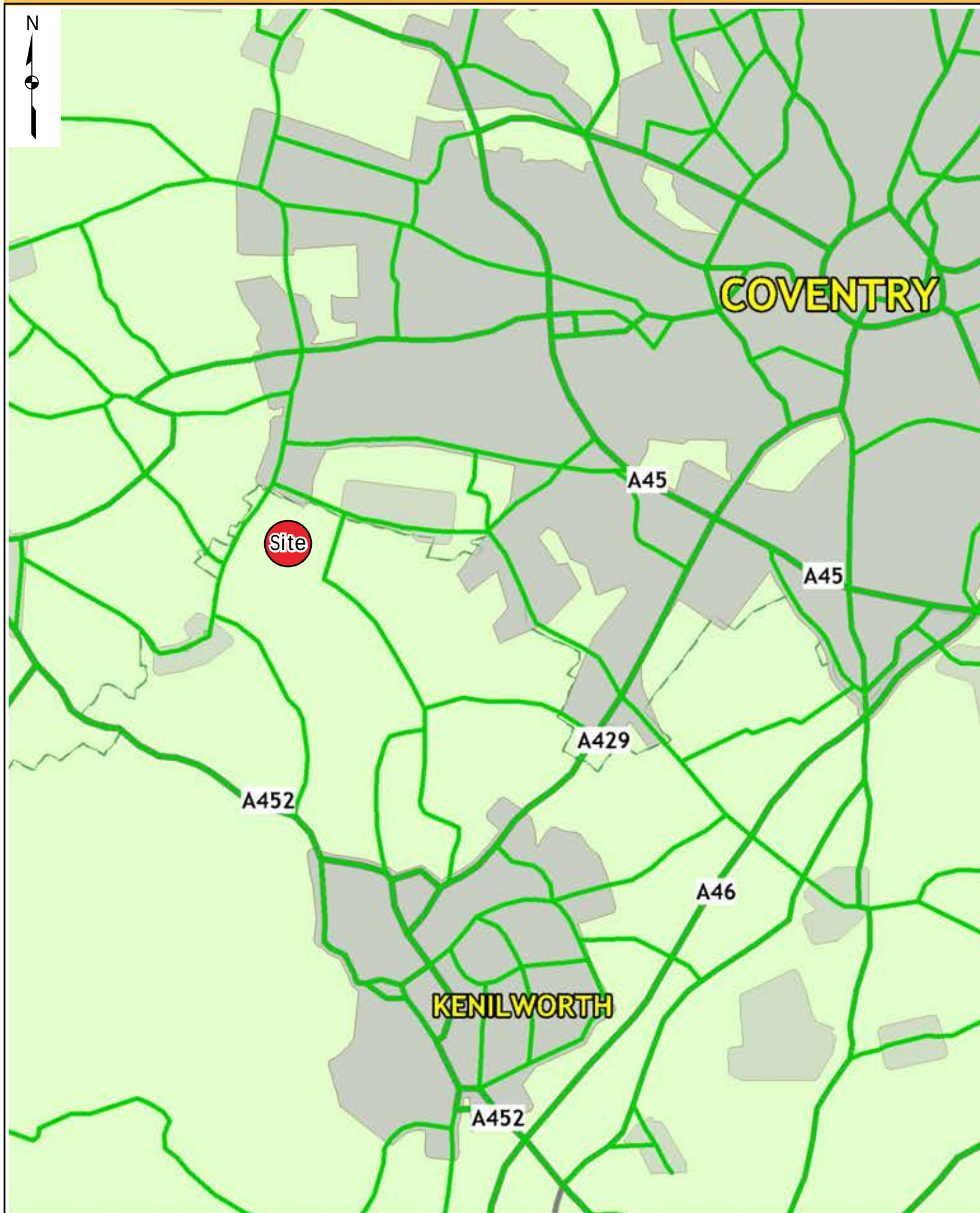
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GEH

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Westwood Heath (reduced site) - AM GEH



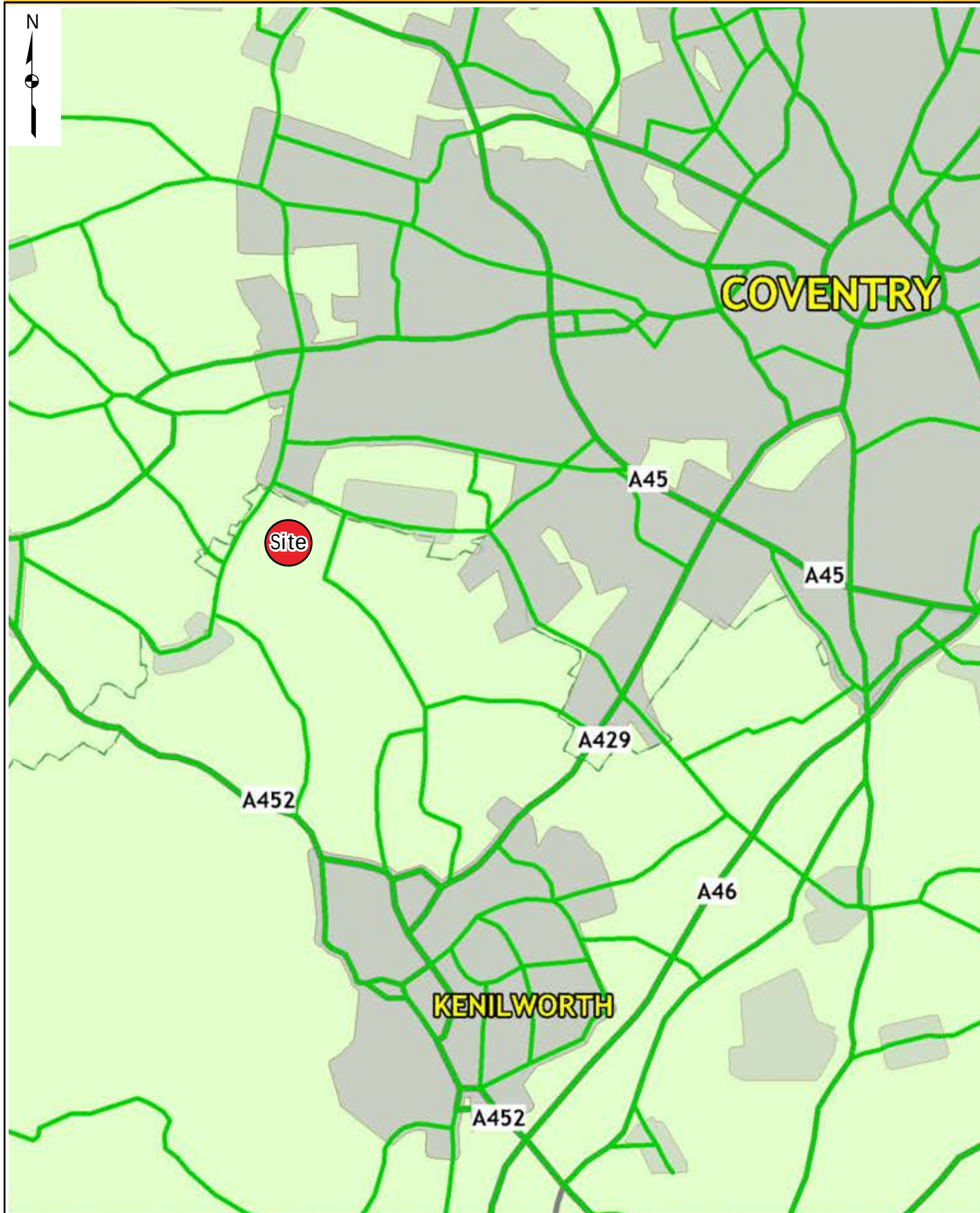
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Westwood Heath (reduced site) - PM GEH



GEH

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Appendix D

Mitigation Strategy

Job No	Report No	Issue no	Report Name	Page
MID3347	001		Warwick District Council Strategic Transport Assessment Modelling	D1

Area	Mitigation Strategy	Cost	Modelled	Opn 1	Opn 2	Opn 3	Opn 4	Opn 4a	Opn 4b	Details
Kenilworth/ Westwood Heath	Gibbet Hill Junction Improvements	500,000	Yes	X						Key junction on the approach to Coventry from Kenilworth and linking the A46 to Warwick University. The junction currently experiences significant congestion issues due to the tidal flow of traffic to the University and Coventry in the AM peak and vice versa in the PM peak. Westwood Heath sites and the cumulative impact of other developments in the district put further pressure on the junction. Improvements would involve increasing length of 2 lane approaches to the junction on the A429 and if possible on the C32 approaches. Some proposals were put forward as part of the Warwick University expansion plan, the status of these is unknown at present.
Kenilworth	Dalehouse Lane roundabout flare extensions, A46/C32 Signalisation and C32/B4115 Roundabout	3,000,000	Yes	X	X	X	X	X	X	Scheme proposals may include signalisation or provision of a dumbbell roundabout arrangement. It is not expected that additional bridges over the A46 will be required. Dalehouse lane roundabout will also require minor improvements and a new roundabout may be required at the C32./B4115 junction. This scheme may come forward as part of other planning applications in the area.
Kenilworth	Kenilworth Station	1,000,000	Discount Trips	X	X	X	X	X	X	WCC has a shovel ready scheme for this location, we are currently seeking funding, this may be achieve prior to adoption of the local plan and thus may not be required as part of the mitigation package
Kenilworth	St Johns Gyratory improvements	500,000	Yes	X	X	X	X	X	X	This may involve provision of additional capacity on the Birches Lane approach or lane widening up to Thickethorn. Due to the existing uses within the gyratory and the rail bridge constraints, it is unlikely that signalisation could be provided. This scheme should be considered in conjunction to the proposals for the A46/A452 junction and it may be worth pooling the contribution to enable a more substantial and coherent scheme can be delivered.
Kenilworth	Thickethorn signalisation	1,500,000	Yes	X	X	X	X	X	X	Full signalisation and the possibility of bus priority. Lengthening the 2 lane approaches to the junction on the A452 may be required. Provision should also accommodate the requirements of the K2L cycle scheme which would pass through this junction.
Leam	Blackdown improvements	750,000	Yes	X	X	X	X	X	X	Mitigation may include provision of additional lanes on the approaches and circulatory of the roundabout and should still allow for the provision of K2L
Leam	Bericote improvements	500,000	Yes	X	X	X	X	X	X	Mitigation may include provision of additional lanes on the approaches and circulatory, dedicated slip to Bericote Lane and 2 lane exits on the A452 to aid the through put. Any mitigation should still allow for the provision of K2L.
Warwick	Coventry Road/Spinney Hill Percy Island	1,000,000	Yes	X	X	X	X	X	X	Mitigation may include extending the approach lanes on the A429, widening the circulatory and providing 2 lane exits on the A429 to aid the through put.
Leam	Partial dualling/link capacity improvement A452 Europa Way and junction improvements	5,000,000	Yes	X						Sections of the route may require dualling or more innovative cheaper alternatives such as centre lane tidal running using ATM gantries could be investigated. It is imperative that queuing onto the M40 mainline is avoided
Leam	Dualling A452 Europa Way and Banbury Spur, junction improvements and bus priority	10,000,000	Yes + discount		X	X	X	X	X	The costs where development is concentrated on this corridor escalate as it is likely that the entire route including Banbury Spur may require dualling or more innovative cheaper alternatives such as centre lane tidal running using ATM gantries could be investigated. It is imperative that queuing onto the M40 mainline is avoided.
Leam	Sustainable Travel Infrastructure	2,000,000	Discount Trips	X	X	X	X	X	X	Extensive sustainable travel infrastructure should be constructed to encourage modal shift and thus alleviate pressure on the road network. It is likely that this contribution would be best spent on provision of K2L cycle route between Kenilworth and Leamington, completion of the existing cycle networks - this has been termed "Missing Links" and provision of new cycle infrastructure linking proposed developments to the existing cycle network. Provision of "Missing Links" may involve working closely with WDC in order to provide the shortest routes to key destinations (e.g. Use of Victoria Park to link the town centre with the proposed cycle infrastructure for Ford Foundry, linking Connect2 to Kenilworth town centre and linking Warwick town centre to the rail station). Provision should include toucan/pedestrian crossings to avoid severance. Provision of minor schemes has not been included in these costs but provision of bus shelters should also be included.
Leam	Town Centre Improvements	2,000,000	Yes	X	X	X	X	X	X	Leamington in particular has significant pressure on town routes. Careful consideration needs to be given as to whether additional capacity should provided where possible in order to alleviate these town routes, whether further improvements to sustainable infrastructure such as further cycle route provision, bus priority and crossing facilities with the aim of reducing demand or divert the funds for use on the wider highway network on order to provide realistic alternatives to using town centre through routes. The funding pool could be used for any of these options or combinations and may require involvement of stakeholder groups to decide the most appropriate way to use the fund.
Leam	Virtual P&Rs	1,500,000	Discount Trips	X	X	X	X	X	X	Virtual Park and Rides accrue the benefits of standard park and ride facilities without incurring the costs of providing expensive infrastructure. Developers would be encouraged to provide additional parking at edge of town sites which could then be utilised for P&R facilities. Instead of providing a bespoke bus services to the P&R facilities, a two stage bus journey would be made where the first stage would provide a direct service to the town centres or employment sites with perhaps one or two stop on route thus avoiding. The second stage would distribute local trips around housing areas or employment areas. This would maximise potential of new bus routes provided by developers which are necessary ensure sustainable access to their developments and to meet model share targets. Such facilities would be easier to deliver where there is a critical mass of development proposed in one area. Suitable sites may include developments along the A452 corridor to the south of Leamington or close to the sites next to the A46 proposed at Kenilworth
Leam	Leamington Northern Relief Road (LNRR)	20,000,000	Yes					X		The route would link an upgraded Old Milverton Lane or would utilise L07 development site distributor roads to link to the A429/A46 grade separated junction.
Leam	Junction 13 and 14 improvements	3,000,000	Yes	X	X	X	X	X	X	These schemes may involve dualling the off slip at J14 of the M40 and signalling J13
Leam	Further Capacity/PT Improvements on A452 between Kenilworth and Leamington	5,000,000	Yes						X	These schemes may involve dualling sections or widening to provide additional link capacity, bus lanes and bus priority schemes to encourage modal shift and should complement the K2L proposals and junction capacity improvements. Chesford bridge may require widening works.
Leam	Greville Rd/Emscote Rd junction improvements	400,000	Yes	X	X	X	X	X	X	Most likely scheme would involve signals. High turning volumes at this junction cause issues currently and will be further exacerbated in the future.
Leam	Princes Dr/Warwick New Rd junction improvements	400,000	No	X	X	X	X	X	X	Most likely scheme would involve signals. High turning volumes at this junction cause issues currently and will be further exacerbated in the future.
Leam	Adelaide Rd/Park Dr junction improvements	400,000	Yes	X	X	X	X	X	X	Most likely scheme would involve signals. High turning volumes at this junction cause issues currently and will be further exacerbated in the future. This may be delivered through other planning applications
Warwick	Myton Rd/Banbury Rd improvements	400,000	No	X	X	X	X	X	X	Signals, not tested but anticipated to be required
Westwood Heath	Improvements on Coventry network	unknown	No	X						Schemes required in Coventry area are not likely to be extensive, Coventry CC will comment in relatio to the Westwood Heath sites on submission of planning application.
			Indicative Total Costs	£ 23,850,000	£ 28,350,000	£ 28,350,000	£ 28,350,000	£ 48,350,000	£ 33,350,000	These are indicative costs based on experience from previous similar schemes
			Costs per Household	£ 2,771.64	£ 3,359.00	£ 3,311.92	£ 3,327.46	£ 5,674.88	£ 3,914.32	Note that no contribution has been attributted to employment developments. It is likely a significant proportion could be attributed to these developments and as such cost per household would decrease